$$K := \begin{bmatrix} 0.6518 & -0.5098 & -0.9926 & -0.656 \\ -0.5098 & 12.9614 & -0.7124 & -0.6602 \\ -0.9926 & -0.7124 & 6.7596 & 0 \\ -0.656 & -0.6602 & 0 & 1.6272 \end{bmatrix}$$

$i := 1 \qquad j := 2$

$K_{i,i} = 0.652 \qquad K_{j,j} = 12.961 \qquad K_{i,j} = -0.51$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K_{i,j}}{K_{i,i} - K_{j,j}} \xrightarrow{solve, \alpha} 0.041320506374050876518 = 2.367 \ \textit{deg}$$

$\cos(\theta) = 0.9991 \qquad \sin(\theta) = 0.0413$

$$P1 := \begin{bmatrix} \cos(\theta) & -\sin(\theta) & 0 & 0 \\ \sin(\theta) & \cos(\theta) & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$K2 := P1^{T} \cdot K \cdot P1 = \begin{bmatrix} 0.6307 & 0 & -1.0212 & -0.6827 \\ 0 & 12.9825 & -0.6708 & -0.6325 \\ -1.0212 & -0.6708 & 6.7596 & 0 \\ -0.6827 & -0.6325 & 0 & 1.6272 \end{bmatrix}$$

$i := 1 \qquad j := 3$

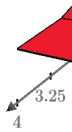
$K2_{i,i} = 0.631 \qquad K2_{j,j} = 6.76 \qquad K2_{i,j} = -1.021$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K2_{i,j}}{K2_{i,i} - K2_{j,j}} \xrightarrow{solve, \alpha} 0.16083145223861038585 = 9.215 \ \textit{deg}$$

$\cos(\theta) = 0.9871 \qquad \sin(\theta) = 0.1601$

$$P2 := \begin{bmatrix} \cos(\theta) & 0 & -\sin(\theta) & 0 \\ 0 & 1 & 0 & 0 \\ \sin(\theta) & 0 & \cos(\theta) & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} 0.9871 & 0 & -0.1601 & 0 \\ 0 & 1 & 0 & 0 \\ 0.1601 & 0 & 0.9871 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

K



$K2$

$$K3 := P2^{T}\ P1^{T} \cdot K \cdot P1 \cdot P2 = \begin{bmatrix} 0.4651 & -0.1074 & 0 & -0.6739 \\ -0.1074 & 12.9825 & -0.6621 & -0.6325 \\ 0 & -0.6621 & 6.9253 & 0.1093 \\ -0.6739 & -0.6325 & 0.1093 & 1.6272 \end{bmatrix}$$

$$P1 \cdot P2 = \begin{bmatrix} 0.9863 & -0.0413 & -0.16 & 0 \\ 0.0408 & 0.9991 & -0.0066 & 0 \\ 0.1601 & 0 & 0.9871 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$i := 1 \qquad j := 4$

$$K3_{i,i} = 0.465 \qquad K3_{j,j} = 1.627 \quad K3_{i,j} = -0.674$$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K3_{i,j}}{K3_{i,i} - K3_{j,j}} \xrightarrow{solve,\alpha} 0.42961597950811604988 = 24.615\ \textit{deg}$$

$$\cos(\theta) = 0.9091 \qquad \sin(\theta) = 0.4165$$

$$P3 := \begin{bmatrix} \cos(\theta) & 0 & 0 & -\sin(\theta) \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ \sin(\theta) & 0 & 0 & \cos(\theta) \end{bmatrix} = \begin{bmatrix} 0.9091 & 0 & 0 & -0.4165 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0.4165 & 0 & 0 & 0.9091 \end{bmatrix}$$

$$K4 := P3^{T}\ P2^{T}\ P1^{T} \cdot K \cdot P1 \cdot P2 \cdot P3 = \begin{bmatrix} 0.1563 & -0.3611 & 0.0455 & 0 \\ -0.3611 & 12.9825 & -0.6621 & -0.5303 \\ 0.0455 & -0.6621 & 6.9253 & 0.0994 \\ 0 & -0.5303 & 0.0994 & 1.936 \end{bmatrix}$$

$$P1 \cdot P2 \cdot P3 = \begin{bmatrix} 0.8966 & -0.0413 & -0.16 & -0.4108 \\ 0.0371 & 0.9991 & -0.0066 & -0.017 \\ 0.1456 & 0 & 0.9871 & -0.0667 \\ 0.4165 & 0 & 0 & 0.9091 \end{bmatrix}$$

$K3$

$i := 2 \qquad j := 3$

$K4_{i,i} = 12.982 \qquad K4_{j,j} = 6.925 \quad K4_{i,j} = -0.662$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K4_{i,j}}{K4_{i,i} - K4_{j,j}} \xrightarrow{solve,\alpha} -0.10761973731125777859 = -6.166 \ \textit{deg}$$

$\cos(\theta) = 0.9942 \qquad \sin(\theta) = -0.1074$

$$P4 := \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos(\theta) & -\sin(\theta) & 0 \\ 0 & \sin(\theta) & \cos(\theta) & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0.9942 & 0.1074 & 0 \\ 0 & -0.1074 & 0.9942 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

$$K5 := P4^{T} \cdot P3^{T} \ P2^{T} \ P1^{T} \cdot K \cdot P1 \cdot P2 \cdot P3 \cdot P4 = \begin{bmatrix} 0.1563 & -0.3639 & 0.0065 & 0 \\ -0.3639 & 13.054 & 0 & -0.5379 \\ 0.0065 & 0 & 6.8537 & 0.0419 \\ 0 & -0.5379 & 0.0419 & 1.936 \end{bmatrix}$$

$$P1 \cdot P2 \cdot P3 \cdot P4 = \begin{bmatrix} 0.8966 & -0.0239 & -0.1635 & -0.4108 \\ 0.0371 & 0.9941 & 0.1007 & -0.017 \\ 0.1456 & -0.106 & 0.9814 & -0.0667 \\ 0.4165 & 0 & 0 & 0.9091 \end{bmatrix}$$

$K4$

$K5$

$i := 2 \qquad j := 4$

$K5_{i,i} = 13.054 \qquad K5_{j,j} = 1.936 \quad K5_{i,j} = -0.538$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K5_{i,j}}{K5_{i,i} - K5_{j,j}} \xrightarrow{solve,\alpha} -0.04823255321220313982 = -2.764\ deg$$

$\cos(\theta) = 0.9988 \qquad \sin(\theta) = -0.0482$

$$P5 := \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & \cos(\theta) & 0 & -\sin(\theta) \\ 0 & 0 & 1 & 0 \\ 0 & \sin(\theta) & 0 & \cos(\theta) \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0.9988 & 0 & 0.0482 \\ 0 & 0 & 1 & 0 \\ 0 & -0.0482 & 0 & 0.9988 \end{bmatrix}$$

$$K6 := P5^{T} \cdot P4^{T} \cdot P3^{T}\ P2^{T}\ P1^{T} \cdot K \cdot P1 \cdot P2 \cdot P3 \cdot P4 \cdot P5 = \begin{bmatrix} 0.1563 & -0.3635 & 0.0065 & -0.0175 \\ -0.3635 & 13.08 & -0.002 & 0 \\ 0.0065 & -0.002 & 6.8537 & 0.0418 \\ -0.0175 & 0 & 0.0418 & 1.91 \end{bmatrix}$$

$$P1 \cdot P2 \cdot P3 \cdot P4 \cdot P5 = \begin{bmatrix} 0.8966 & -0.004 & -0.1635 & -0.4115 \\ 0.0371 & 0.9937 & 0.1007 & 0.031 \\ 0.1456 & -0.1027 & 0.9814 & -0.0717 \\ 0.4165 & -0.0438 & 0 & 0.9081 \end{bmatrix}$$

$i := 3 \qquad j := 4$

$K6_{i,i} = 6.854 \qquad K6_{j,j} = 1.91 \qquad K6_{i,j} = 0.042$

$$\theta := \tan(2 \cdot \alpha) = \frac{2 \cdot K6_{i,j}}{K6_{i,i} - K6_{j,j}} \xrightarrow{solve, \alpha} 0.008455893596977733856 9 = 0.484 \ deg$$

$\cos(\theta) = 1 \qquad \sin(\theta) = 0.0085$

$$P6 := \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & \cos(\theta) & -\sin(\theta) \\ 0 & 0 & \sin(\theta) & \cos(\theta) \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & -0.0085 \\ 0 & 0 & 0.0085 & 1 \end{bmatrix}$$

$$\Lambda := P6^{T} \cdot P5^{T} \cdot P4^{T} \cdot P3^{T} \ P2^{T} \ P1^{T} \cdot K \cdot P1 \cdot P2 \cdot P3 \cdot P4 \cdot P5 \cdot P6 = \begin{bmatrix} 0.1563 & -0.3635 & 0.0063 & -0.0176 \\ -0.3635 & 13.08 & -0.002 & 0 \\ 0.0063 & -0.002 & 6.8541 & 0 \\ -0.0176 & 0 & 0 & 1.9096 \end{bmatrix}$$

$$\Phi := P1 \cdot P2 \cdot P3 \cdot P4 \cdot P5 \cdot P6 = \begin{bmatrix} 0.8966 & -0.004 & -0.167 & -0.4101 \\ 0.0371 & 0.9937 & 0.101 & 0.0301 \\ 0.1456 & -0.1027 & 0.9807 & -0.08 \\ 0.4165 & -0.0438 & 0.0077 & 0.908 \end{bmatrix}$$